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09/269,972	04/08/1999	YUKIO NAKAJIMA	Q53854	1844

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EXAMINER

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/269,972

Applicant(s)

NAKAJIMA, YUKIO

Examiner

Dwin M. Craig

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-19 have been presented for reconsideration based on Applicant's Request for Continued Examination (RCE) under 37 CFR § 1.114 and Applicant's amended claim language. Claims 1-19 are rejected under 35 USC § 103(a) in view of the BPAI decision rendered on 8/12/2005 and are found unpatentable under *Res judicata* in that these claims have already been argued and rejected based upon the BPAI decision. This Office Action is Final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 1-19 are rejected under 35 USC § 103(a) as being unpatentable over Kamegawa et al. US Patent 5,710,718 in view of Tang US Patent 6,061,673.
- 2.1 Claim 1 is an independent claim with 3 limitations.

2.2 First, “**conversion system...design parameters...design performance**” is disclosed by Kamegawa ‘718 FIG 2 element 102 “DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLE”.

2.3 Second, “**objective function...setting a constraint**” is disclosed by Kamegawa ‘718 FIG 2 element 102 “DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLE”.

2.4 Third, “**optimum value of the objective function**” is disclosed by Kamegawa ‘718 FIG 2 element 116 “HAS THE VALUE OF THE OBJECTIVE FUNCTION CONVERGED?”.

2.5 Kamegawa ‘718 does not expressly disclose that the conversion system is a *neural* conversion system.

2.6 “**multi-layered feed forward type neural network**” is disclosed by Tang ‘673 at FIG 5, and at Column 10 line 8 “system shown in FIG. 5 is a multi-layered forward network”.

2.7 At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Tang ‘673 to modify Kamegawa ‘718. One of ordinary skill in the art would have been motivated to do this to “obtain specified learning effects during a very short learning period” according to Tang ‘673 at Column 13 line 59.

2.8 As regards dependent Claim 2 is rejected for the same reasons as Claim 1. The Examiner fails to find any additional limitations (or any substantial difference) in step (c) of dependent Claim 2 in comparison with step (c) of independent Claim 1.

2.9 Claim 3 depends from Claim 2 and contains two additional limitations, and is rejected for the same reasons plus these additional reasons:

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2.10 First, “sensitivity of the objective function” is disclosed by Kamegawa ‘718 FIG2 element 112 “CALCULATE SENSITIVITY FOR EACH DEESIGN VARIABLE”.

2.11 Second, “calculating a value of the objective function when the design variable is changed to correspond to a predicted amount and a value of the constraint condition when the design variable is changed” is disclosed by Kamegawa ‘718 FIG 2 element 110 “CALCULATE THE VALUE OF THE OBJECTIVE FUNCTION IN THE DETERMINED TIRE SHAPE AND CALCULATE THE VALUE OF THE CONSTRAINT”. Claim 3 also has been amended to include a *neural* conversion step, please see sections 2.5-2.7 of this Office Action in regards to this limitation.

2.12 Claim 4 depends from Claim 1 and contains three additional limitations and is rejected for the same reasons plus these additional reasons:

2.13 First, “**(d) selecting, as a design variable, one of the design parameters included in the conversion system**” is disclosed by Kamegawa ‘718 FIG 2 element 102 “DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLE”.

2.14 Second, “**(e) changing a value of the design variable...until the optimum value of the objective function is given**” is disclosed by Kamegawa ‘718 FIG 2 element 116 “HAS THE VALUE OF THE OBJECTIVE FUNCTION CONVERGED?”.

2.15 Claim 5 depends from Claim 4 and contains one additional limitation, and is rejected for the same reasons plus these additional reasons:

2.16 “**a constraint condition**” is disclosed by Kamegawa ‘719 FIG 2 element 102 “DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLE”.

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2.17 Claim 6 depends from Claim 4 and contains three additional limitations, and is rejected for the same reasons plus these additional reasons:

2.18 First, **“sensitivity of the objective function”** is disclosed by Kamegawa ‘718 FIG 2 element 112 **“CALCULATE SENSITIVITY FOR EACH DESIGN VARIABLE”**.

2.19 Second, **“value of the objective function when the design variable is changed”** is disclosed by Kamegawa ‘718 FIG 2 element 110 **“CALCULATE THE VALUE OF THE OBJECTIVE FUNCTION IN THE DETERMINING TIRE SHAPE, AND CALCULATE THE VALUE OF THE CONSTRAINT”**.

2.20 Third, **“optimum value of the objective function”** is disclosed by Kamegawa ‘718 FIG 2 element 116 **“HAS THE VALUE OF THE OBJECTIVE FUNCTION CONVERGED”**.

2.21 Claim 7 depends from Claim 1 and contains nine additional limitations, and is rejected for the same reasons plus these additional reasons:

2.22 First, **“plurality of base models”** is disclosed by Kamegawa ‘719 FIG 29A element 204 **“CALCULATE INITIAL VALUES OF OBJECTIVE FUNCTION AND CONSTRAINT OF N MODELS”**.

2.23 Second, **“adaptive function”** is disclosed by Kamegawa ‘718 FIG 29A element 216 **“TO BE MUTATED?”**.

2.24 Third, **“intersecting the design variables”** is disclosed by Kamegawa ‘718 FIG 29A element 210 **“TO BE INTERSECTED?”**.

2.25 Fourth, **“obtaining an objective function...by changing the design variable”** is disclosed by Kamegawa ‘718 FIG 29B element 204 **“CALCULATE OBJECTIVE FUNCTION AND CONSTRAINT OF TWO MODELS DETERMINED.”**

2.26 Fifth, **“storing the base models”** is disclosed by Kamegawa ‘718 FIG 29A element 202 **“DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLES OF N TIME MODELS”**.

2.27 Sixth, **“repeating the storing step until the number of stored base models reaches a predetermined number”** is disclosed by Kamegawa ‘718 FIG 29A element 202 **“DETERMINE OBJECTIVE FUNCTION, CONSTRAINT, AND DESIGN VARIABLES OF N TIRE MODELS”**.

2.28 Seventh, **“predetermine convergence condition”** is disclosed by Kamegawa ‘718 FIG 29B element 230 **“CONVERGE?”**.

2.29 Eighth, **“repeated until”** is disclosed by Kamegawa ‘718 FIG 29B element 230 **“CONVERGE?”**.

2.30 Ninth, **“if the predetermined convergence conditions satisfied, designing a tire...optimum value of the objective function”** is disclosed by Kamegawa ‘718 FIG 29B element 232 **“DETERMINE TIRE CONFIGURATION”**.

2.31 Claim 9 is an independent claim for a product **“A tire which is formed according to design parameters designed by a tire design according to claim 1.”**

2.32 Claims 10-13 are apparatus claims (**“An optimization analyzing apparatus”**) with the same limitations as method Claims 1-7, and therefore are rejected for the same reasons Claims 1-7 above.

2.33 Claims 15-19 are **“storage medium”** claims with the same limitations as method Claims 1-7 and are therefore rejected for the same reasons as Claims 1-7 above.

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2.34 Claim 8 depends from Claim 1 with one additional limitation, and is rejected for the same reasons plus these additional reasons:

2.35 Kamegawa '718 does not expressly disclose **“multi-layered feed forward type neural network”**.

2.36 **“multi-layered feed forward type neural network”** is disclosed by Tang '673 at FIG 5, and at Column 10 line 8 “system shown in FIG. 5 is a multi-layered forward network”.

2.37 At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Tang '673 to modify Kamegawa '718. One of ordinary skill in the art would have been motivated to do this to “obtain specified learning effects during a very short learning period” according to Tang '673 at Column 13 line 59.

2.38 Claim 14 depends from Claim 10 with one additional limitation, and is rejected for the same reasons plus these additional reasons:

2.39 Kamegawa '718 does not expressly disclose **“multi-layered feed forward type neural network”**.

2.40 **“multi-layered feed forward type neural network”** is disclosed by Tang '673 at FIG 5, and at Column 10 line 8 “system shown in FIG. 5 is a multi-layered forward network”.

2.41 At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use Tang '673 to modify Kamegawa '718. One of ordinary skill in the art would have been motivated to do this to “obtain specified learning effects during a very short learning period” according to Tang '673 at Column 13 line 59.

Conclusion

3. It is noted by the Examiner that these grounds of rejections were already argued and affirmed by the BPAI decision rendered on 8/12/2005. Under *Res judicata* these claims have been determined to be unpatentable and are therefore rejected.

3.1 This is a continuation of applicant's earlier Application No. 09/269,972. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

3.3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC

A handwritten signature in black ink, appearing to read 'L. P. Picard', with a stylized flourish at the end.

**LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100**